

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1 and 3-8 are pending. Claim 2 was previously cancelled. Claims 1, 7, and 8 are amended. Claim 1 is independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Rejections Under 35 U.S.C. § 103(a)

Claim 1, 3, 4, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosravi (U.S. Patent 6,361,546) in view of Brooks et al. (U.S. Patent 6,346,116); and

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosravi in view of Brooks et al., and further in view of Rosenbluth (WO 99/56801).

These rejections are respectfully traversed.

Arguments Regarding Independent Claim 1

Claims 1, 3, 4, 7 and 8 have been rejected as being unpatentable over Khosravi (U.S. Patent 6,361,546) in view of Brooks et al. (U.S. Patent 6,346,116). In the Office Action, the Examiner has identified the combination of shaft 12 and member 54 attached thereto as a flexible shaft and he has stated that shaft 12 is flexible in the embodiment described in col. 4, and that the flexible shaft is a “wire” member since this member is very thin (second paragraph, page 2 of Office Action).

However, Applicants believe that the Examiner has made an error in the determination of the subject matter of Khosravi. In fact, Khosravi discloses vascular filter 10

comprising a tubular member 12, an expandable frame 14 disposed on the tubular member 12, a filter material 16 attached to the expandable frame 14 and/or tubular member 12, and a connector on the proximal end of the tubular member for detachably securing the vascular filter to a delivery device 50. The delivery device 50 includes an elongate tubular sheath 52 and an elongate bumper member 54 slidably disposed within the sheath 52 (col. 3, lines 59-65). Khosravi teaches that the distal ends 28 may be attached to a collar and/or the proximal ends 26 may be attached directly to the outer surface 18 of the tubular member 12 (col. 4, lines 24-27). It also teaches that the sheath 52, with the vascular filter 10 introduced therein, is advanced over the guide wire 68, which was initially placed across a treatment site 102 within a blood vessel 100 using conventional percutaneous methods, until the distal end 60 of the sheath 52 extends beyond the treatment site 102 (col. 5, lines 48 to col. Line 10). Thus it is clear that a flexible shaft (combination of shaft 12 and member 54) as defined by the Examiner does not serve as a guide wire and needs an independent guide wire 68 separately from both vascular filter 10 and delivery device 50.

In addition, Khosravi teaches that it is important that the vascular filter 10, when deployed within a blood vessel, slidably engages the guide wire 68 used to deliver it (col. 3, lines 12-22) and remains within the blood vessel while the member 54 is withdrawn from the blood vessel together with the sheath 52.

In contrast therewith, the wire member 31 of the present invention is fixed at their proximal ends to the flexible shaft (guide wire) 2 and the flexible shaft (guide wire) 2 remains within the blood vessel during treatment.

Accordingly, it is clear that the combination of Khosravi's shaft 12 and member 54 does not have a function to serve as a guide wire and considerably differs in construction and function from the flexible shaft of the present invention. Thus, it is believed that the opinion of the Examiner is based on the misunderstanding of the subject matter of the document Khosravi.

Further, the vascular filter of Khosravi requires an independent retrieval device including a sheath and a retrieval member in order to recover it from the blood vessel. In contrast, the thrombus capture catheter of the present invention does not require such an independent retrieval device as the thrombus capture member is provided on the distal end of the flexible shaft which serves as a guide wire. Thus, the present invention is never obvious from Khosravi.

The Examiner stated that Khosravi fails to disclose that the filter frame wires 24 as being spiral and crossed with one another, but the Brooks et al. teach that filter frame wires 56 for supporting an endovascular filter membrane are spiral and crossed with one another, apparently in order to obtain the advantage of better supporting the filter membrane around its circumference.

Although Brooks et al. teach that struts 56 of a filter assembly basket 58 shown in Fig. 4 have a dense braid on distal portion 60 that transitions to a less dense braid on proximal portion 62, the filter assembly basket 58 is fixed to guide wire 64 (correctly 65 in Fig. 4) at its proximal end 66 and distal end 68. Thus, movements or displacements of the

braided struts 56 are restricted to each other. In fact, filter assembly 12 of Brooks et al. is collapsed within the sheath as shown in Fig. 2, from which it is clear that the distal portion of the filter assembly 12 is turned in the sheath along the guide wire.

Different from struts 56 of Brooks et al., the spiral wires of the present invention are crossed with one another, but they are never braided together to allow them to move freely without being restricted to each other (see Figs. 2, 3 and 13). Such a crossed structure of the spiral wires allows the crossed wire member 31 to contract and expand smoothly when inserting the thrombus capture member 3 into the lumen of the sheath and pushing the thrombus capture member 3 out of the sheath. It is therefore clear that the crossed wire member of the present invention differs in both structure and function from that of the filter frame wires of Brooks et al.

At least for the reasons explained above, Applicants respectfully submit that the combination of elements as set forth in independent claim 1 is not disclosed or made obvious by the prior art of record, including Khosravi and Brooks et al.

Therefore, independent claim 1 is in condition for allowance.

Dependent Claims

The Examiner will note that dependent claims 7 and 8 have been amended.

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

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Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a)
are respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

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